NOTES ON WEST INDIAN CRUCIFERAE

By N. L. Britton

Mr. O. E. Schultz has contributed an account of the crucifers known to him to occur in the West Indies to Professor Urban's "Symbolae Antillanae" (3 : 493–523), in which he describes 23 species included in 11 genera. All but four of the species recognized are natives of the Old World, introduced into the islands as waifs or weeds. The indigenous species are :

1. Cakile lanceolata (Willd.) O. E. Schultz, *loc. cit.* 505. 1903.

Raphanus lanceolatus Willd. Sp. Pl. 3 : 562. 1801.

Cakile domingensis Tuss. Fl. Ant. 1 : 119. 1808.

Cakile aequalis L'Hér.; DC. Syst. 2 : 430. 1821.

Cakile cubensis H.B.K. Nov. Gen. & Sp. 5 : 58. 1821.

Cakile lanceolata subsp. *domingensis* O. E. Schultz, *loc. cit.* 1903. Type locality : Antilles.

This occurs on sandy beaches and is reported by Schultz from Colombia and St. Vincent northward to the Bahamas and Florida. It grows also on the Bermudas, as recorded long ago by Hemsley in the Botany of the Challenger Expedition, but overlooked by Schultz. That this plant is specifically distinct from the northern Atlantic coast *C. edentula* (Bigel.) Hook., which Schultz refers to it as a subspecies, is evident at least to any one who has seen both species living. The status of *C. geniculata* (Robinson) Millsp. in Publ. Field Columb. Mus. Bot. Ser. 2 : 126, and of *C. alacranensis* Millsp. *loc. cit.* 130, both of which he refers to *C. lanceolata* as proles or varieties, can be established only by the examination of more specimens than are now available. Indeed, the attempt of Mr. Schultz to classify the plants of this genus into named forms and varieties of various ranks serves no useful purpose whatever, and does not express their real relationships at all ; the only advance that he has made in their study is to point out an older name for the species long known as *C. aequalis* L'Hér.

2. **Radicula* glabra** (O. E. Schultz)

Nasturtium palustre subsp. *hispidum* var. *glabrum* O. E. Schultz, *loc. cit.* 516. 1903.

This is a robust plant, often 6 dm. tall, with large, deeply pinnatifid leaves, quite glabrous, except for a few long hairs at the margins of the petiole-bases ; the silicles are ovoid-globose, only a trifle longer than thick, 2–2.5 mm. in diameter, but the septum elongates and narrows as the valves and seeds fall away, becoming 4–5 mm. long. Its relationship is with *R. hispida* of continental North America, reported also by Schultz from Haïti. *Radicula glabra* is well illustrated by Curtiss' no. 672 from Bejucal, Cuba ; Mr. Schultz based the name upon Wright's no. 1862 from Cuba, and I know the species only from these two collections. It appears to me quite as different from either *R. palustris* (L.) Moench or *R. hispida* (Desv.) Britton as the following species is from the Floridian *R. Walteri* (Ell.) Greene.

3. **Radicula brevipes** (DC.)

Nasturtium palustre var. *brevipes* DC. Syst. **2** : 192. 1821.

Nasturtium brevipes Griseb. Mem. Amer. Acad. **8** : 154. 1860.

Nasturtium tanacetifolium var. *insularum* Robinson in A. Gray, Syn. Fl. N. A. **1**[1] : 149. 1895.

Moist or wet situations, Cuba, Santo Domingo, Porto Rico.

Mr. Schultz proposes a variety *pumilum* of this species, citing as type Wright's no. 1562 from Cuba ; our specimen of that number seems to be merely a depauperate state of the species.

4. Cardamine pennsylvanica Muhl. ; Willd. Sp. Pl. **3** : 486. 1801

Schultz records this from Haïti, on the evidence of specimens collected by Poiteau, preserved in the Ventenat and Delessert herbaria. Our collectors have not found it on that island. He ranks it as a subspecies of the European *C. flexuosa* Withering, but I regard these species as quite distinct.

As to the introduced species, I record the following data of distribution additional to those cited by Schultz :

* Radicula (Dillen) Hill, Brit. Herb. 264. 1756. *Roripa* Scop. 1760.

Lepidium virginicum L. Common in Bermuda. Mr. Schultz could not have consulted the Kew herbarium for Bermuda specimens.

Coronopus didymus (L.) J. E. Smith. This he cites from Bermuda, collected by Rein, but not from the Bahamas, where it occurs on the island of New Providence (*Earle 34; Britton & Brace 790*); it has also been found at Cinchona, Jamaica (*Harris 8579*); Schultz cites it from Jamaica on the old authority of MacFadyen.

Sisymbrium officinale (L.) Scop. This he also cites from Jamaica on the authority of MacFadyen, but from nowhere else in the West Indies. It is a common weed in Bermuda, duly recorded by Hemsley, whose authority is quite as good as MacFadyen's, and by others. He proposes a variety *leiocarpum* from Haïti, characterized only by glabrous siliques; the Bermuda plant as represented by *Brown & Britton 343* has these also, and if he had looked through a good series of specimens from eastern North America he would have found glabrous siliques on a large percentage of them.

The following naturalized species of Bermuda, observed and collected by Mr. Stewardson Brown and myself last September, are not recorded at all from the West Indies by Mr. Schultz; all were previously reported by Hemsley.

Matthiola incana (L.) R. Br. On seaside cliffs, Port Royal and elsewhere (*Brown & Britton 349*).

Brassica nigra (L.) Koch. Cultivated land, very common in Bermuda (*Brown & Britton 371*).

Koniga maritima (L.) R. Br. Roadside near Warwick Camp (*Brown & Britton 353*).

Mr. Hemsley also records the following from Bermuda; they were not seen there during our visit in September, 1905, but may very well be in evidence earlier in the year:

Lepidium ruderale L.

Raphanus Raphanistrum L.

It is to be hoped that the next time Mr. Schultz takes up a West Indian family for study, he will give us results which will be more complete and satisfactory than those of this excursion

into the Cruciferae, and that he will not take amiss the suggestion to consult as conspicuous a book as the Botany of the Challenger Expedition.

TERATOLOGICAL NOTES

By S. B. Parish

1. *Retrogression of Pistil and Sepaloidy in Gentiana viridula.* — This is a small annual species of the *Chondrophylla* group, with solitary terminal flowers, inconspicuous and green in color, except for the scanty blue plaits in the sinuses. They are seen in the figure at the ends of the three short stems. Those which appear on the two long stems have undergone a remarkable metamorphosis. The corolla has lost its form and become calyx-like, with a margin merely toothed. The anthers retain their position, as is shown in the detail figure, where the sepaloid corolla is represented as laid open. The pistil is transformed into an elongated tube, having an enlarged, bilabiate summit.

There were a number of specimens, all showing the same malformations. They were collected in the San Bernardino Mts., by Mrs. Charlotte M. Wilder, to whom I am indebted also for the accompanying drawing.

2. *Suppression of Floral Cycles in Prunus.* — In an orchard there is a row of plum trees of the variety known as the "Wild Goose." All of them produce regular crops, except one, which has never borne a single fruit. An examination during the flowering season revealed the cause of its barrenness. Normally the flowers of this plum are borne on inch-long pedicels, in clusters of five or six. In the case of the tree in question the pedicel, the calyx, the corolla, the gynoecium, all were wanting.

There remained only a sessile cluster of about twelve antheriferous stamens, arising directly from the bud-scales. The tree was abundantly loaded with these imperfect flowers. Nurserymen usually bud their stock from bearing trees, so that we probably have here a case of bud-variation. Naturally it would have been confined to the single bud, but this happening to have been taken for propagation, has produced its like in an entire tree.